

5 th , the 9 th , the 10 th embodiment , and is good also as what combined these composition . This invention is not limited to each embodiments mentioned above , and includes the various modifications also including the combination of each embodiment mentioned above .

What is claimed is :

Claim 1 Throwaway tip characterized that the corner angle of two corner edge is made into 90° or less , and the other two corner edge which counter including these corner tooth respectively is made as non parallel tooth while the shape is formed approximately square shape plate late .

Claim 2 The throwaway tip of the claim 1 characterized that the other of the another two corner tooth of one face is the corner angle of 90° or less .

Claim 3 The throwaway tip of claim 1 characterized that the other two corner edge of one face is made as non-parallel tooth .

Claim 4 The throwaway tip of claim 1 characterized that the two pair of non-parallel tooth opposite each other inclines the length from the seating face opposite to one face so as to change gradually from the one edge side

toward the other edge side .

Claim 5 The throwaway tip of claim 1 characterized that the other of another two corner tooth of the one face is the corner angle of 90 ° or less, the cutting tooth including one of this corner tooth and the other corner tooth is made into a long tooth , in this long tooth , in the edge portion including one of the other corner tooth, the sub-cutting tooth is formed , inclination to the other portion so as to retreat inside of one face as this sub-cutting tooth is approached to the corner tooth .

Claim 6 The throwaway tip of claim 1 characterized that non-parallel two tooth is made as long tooth , the opposite two cutting tooth is made as short tooth, in this long tooth , the portion of the other corner tooth slippage is made as the strengthening portion which the cutting tooth is strengthened than that of the another respectively .

Claim 7 The throwaway tip of claim 6 characterized that the strengthening portion is constructed so that the rake angle of long tooth is made as small than that of the other of long tooth .

Claim 8 The throwaway tip of claim 6 characterized that the circle honing is treated in each cutting tooth , and the strengthening portion is

made so that the curvature radius of the tip of cutting tooth in strengthened portion is larger than that of another portion of long tooth .

Claim 9 The throwaway tip of claim 6 characterized that the land part is formed in each cutting tooth in one face , and the strengthening portion is made so that the width of land part in strengthened portion is larger than that of another portion of long tooth .

Claim 10 The throwaway tip of claim 6 characterized that the other of another two corner tooth of one face has a corner angle of 90° or less , in the long tooth including this corner tooth , the sub-cutting tooth which inclines to another portion so that it may retreat inside of one face as approaching to this corner tooth is formed .

Claim 11 The throwaway type cutting tool characterized that two or more throwaway tips of which the tooth is respectively projected and arranged to the tip side of a main part of tool are equipped , the throwaway tip is made as the same as the throwaway tip of claim 1 , these two or more throwaway tips are arranged of which two corner tooth adjoining each other is projected and arranged respectively to the perimeter side of a tip of a main part of a tool .

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Claim 12 The throwaway type cutting tool of claim 11 characterized that the throwaway tip of which one corner tooth is projected to the perimeter side of a tip of a main part of a tool is the one of which the tooth prolonged to inside of radius direction of a main part of tool from this corner tooth is prolonged till to the rotation axis line of a main part of a tool as front face tooth .

Claim 13 The throwaway type cutting tool of claim 11 characterized that the one non-parallel two tooth of throwaway tip is made into a long tooth , the another non parallel two tooth is made into a short tooth , the one of two or more throwaway tips projected to a tip side of a main part of tool uses a long tooth as a front face tooth , and a short tooth as a perimeter tooth , and the others are arranged the short tooth as a front face tooth and a long tooth as perimeter tooth to a tip of a main part of a tool .

Claim 14 The throwaway type cutting tool of claim 13 characterized that the same throwaway tip which the long tooth is made as a perimeter tooth to a base edge side of one throwaway tip is arranged in a main part of a tool , and the rotation axis of a perimeter tooth is overlapped in the rotating around of the rotation axis line of a main part of a tool .

Claim 15 The throwaway type cutting tool characterized that two or more throwaway tip is as the throwaway tip of claim 5 , the one of two or more throwaway tip is made the long tooth having a sub cutting tooth as a front face tooth , the short tooth as a perimeter tooth , and the long tooth having sub- cutting tooth is projected and arranged to a tip side of a tool than another portion of long tooth , and the other is arranged a short tooth as a front face tooth, a long tooth as a perimeter tooth , the same throwaway tip of which the long tooth is as a perimeter tooth is arranged to a base edge side of a throwaway tip , the rotation axis of each perimeter tooth is overlapped in case of rotation around to a rotation axis line of a main part of a tool , in case that the long tooth having sub-cutting tooth about throwaway tip is as a perimeter tooth, the sub-cutting tooth is located in the circumference side in a tool than another portion of the long tooth and it may not act on cutting of work material .

Claim 16 The throwaway type cutting tool characterized that the two or more throwaway tip is as the throwaway tip of claim 6 , the one of throwaway tip is arranged a long tooth as a front face tooth, a short tooth as a perimeter tooth , the other is arranged a short tooth as front face tooth ,

and a long tooth as a perimeter tooth, locating the strengthening portion in not overlapping portion of a rotation axis with a perimeter tooth of one throwaway tip .

Claim 17 The throwaway type cutting tool of claim 16 characterized that the same throwaway tip of which the long tooth is as a perimeter tooth is arranged on a base edge side of a throwaway tip , the rotation axis of each perimeter tooth is made to be overlapped in case of rotating around rotation axis line of a main part of a tool , and the strengthening portion is located so that the rotation axis is not overlapped with another perimeter tooth ,in perimeter tooth respectively .

Claim 18 The throwaway type cutting tool characterized that two or more throwaway tips is the same throwaway tip of claim 10 , and one of these two or more throwaway tips is made the long tooth having a sub-cutting tooth as a front face tooth , a short tooth as a perimeter tooth , and the long tooth having a sub-cutting tooth is arranged so that a sub-cutting tooth is projected to a tip side of a tool than another portion of long tooth , and the other is arranged the short tooth as a front face tooth, the long tooth as a perimeter tooth , and the same throwaway tip of which the long tooth is

as a perimeter tooth is arranged on a base edge side of a throwaway tip in a main part of a tool , and the rotation axis of each perimeter tooth is overlapped in case of rotating around a rotation axis line of a main part of a tool , and the strengthening portion is arranged to be located in a portion that the rotation axis is not overlapped with another perimeter tooth ,in a perimeter tooth of a throwaway tip ,and in case that the long tooth having a sub-cutting tooth about another tip is made as a perimeter tooth , the sub-cutting tooth may be located in the circumference side rather than another portion of a long tooth and it may not act on cutting of work material .

